Personal Bubble Universe

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> Every person lives inside a world built by their own perception, close enough to everyone else's to share a sidewalk and different enough to see a different dress, a different game and a different argument. An evidence-based case that each human experience works like a universe of its own, that closeness between two people tracks how much those universes overlap, and that the rest of closeness comes from appreciating the part that does not overlap, with an honest account of where the metaphor breaks, including the magnets, which run the other way.

One street, many universes

Each person's experience is a universe of its own.

Partly that is a metaphor, but only partly. Your perception decides what you see and how you see it. It picks what you notice, what it means, what color it is, what it feels like. Two people on the same street are each standing in the middle of a world their own brain put together, and from the inside those worlds are different enough to be on par with different universes. They share a lot of furniture. They do not share the view.

I have felt this for a long time without having a word for it. Some people I meet and it is like we have been living in the same place for years. Others I can talk to for an hour and it is like we are on opposite ends of a phone line with a bad connection. I used to think of the first kind as chemistry and the second as just not clicking. I now think both are a question of how much two universes overlap.

That is the argument of this essay. Every person lives in a personal bubble universe. How close you are with someone depends on how much your bubbles overlap, like a Venn diagram drawn in more dimensions than a page can hold and changing over time. Closeness also comes from the part that does not overlap, when you appreciate it instead of fighting it. And the pull people describe as an energy connection may be what overlap feels like from the inside.

The premise

By a personal bubble universe I mean three things.

First, your world is built, not received. Your brain does not hand you a recording of what is out there. It makes a running best guess, shaped by your body, your history and what you expect, and that guess is the only world you ever get to live in.

Second, the guesses differ between people, and not only in opinions. They differ in what people literally see and hear, and in what goes on inside their heads, in ways that have been measured.

Third, the bubbles overlap. Language, culture, family, work and time spent together all build shared territory. Nobody lives in a sealed bubble, and nobody fully shares one.

What I do not mean: that nothing is real, that all views are equally right, or that you can wish your way into a different world. There is one physical world. The claim is that each of us only ever meets it through a private version, and that the differences between versions explain more about closeness and conflict than we usually give them credit for.

The first four essays in this series, from The Ego Death of Society to Impatiently Waiting, were mostly about work. This one steps back from it. It is about why other people see things so differently in the first place, and what that means for getting close to them.

What the evidence says about separate worlds

First, perception is a guess. The neuroscientist Anil Seth puts it bluntly: "perception right here and right now is also a kind of hallucination, but a controlled hallucination." He adds the line that this whole essay hangs on: "when we agree about our hallucinations, we call that reality." And he says it about each of us: "Our individual self and worlds are unique to each of us" (Seth, TED 2017, transcript). The philosopher Andy Clark, who wrote a book on the same idea, says "Perception is about the brain having a guess at what's most likely to be out there," and that "everybody's experience is going to be different in ways that reflect their idiosyncratic life histories" (Clark, interviewed in Nautilus). These are theories, not settled fact, but they are where the field has been heading for years.

Second, the guesses really do come apart, sometimes over something as plain as a photo of a dress. In 2015 a picture of a striped dress split the internet. Rosa Lafer-Sousa, Katherine Hermann and Bevil Conway asked 1,401 people what colors they saw. Fifty-seven percent saw blue and black, 30 percent saw white and gold, 11 percent saw blue and brown, and 2 percent something else. Older people and women were more likely to see white and gold (Lafer-Sousa, Hermann and Conway, Current Biology 2015). Conway's explanation was that the split may reflect "the type of light that individuals' brains expect to be in their environment" (ScienceDaily). Clark reads it the same way: different lives taught different brains different guesses about where the light was coming from. Same pixels, different dresses. Nobody was lying, and nobody could see it the other way by trying harder.

Third, the inside of people's heads differs even more. Merlin Dance, Alberta Ipser and Julia Simner surveyed 1,004 people and found that 3.9 percent had aphantasia, absent or only vague, dim visual imagery, and 0.8 percent had no imagery at all (Dance, Ipser and Simner, Consciousness and Cognition 2022). Ask people to picture a beach and roughly one in twenty-five sees little or nothing. Inner speech varies too. Russell Hurlburt and colleagues gave 30 people a beeper that went off at random ten times a day for three days and asked what was in their experience at that exact moment. Some people were

talking to themselves in none of the beeps. One was talking to themselves in 75 percent. The average was 23 percent (Hurlburt, Heavey and Kelsey 2013, via the British Psychological Society). It is a small sample, but the point lands: the voice in your head that you assume everyone has is, for some people, mostly not there.

Fourth, loyalty changes what people see happen in front of them. In 1951, Princeton played Dartmouth in a rough football game. Albert Hastorf and Hadley Cantril showed a film of it to students from both schools and had them count infractions. Princeton students saw Dartmouth commit more than twice as many as Princeton, and more than twice as many as Dartmouth students saw. Dartmouth students saw roughly equal numbers on each side. The authors concluded that "the 'game' actually was many different games" (Hastorf and Cantril 1954, as summarized here; Princeton Alumni Weekly). I could only find this study through secondary reports, which give ratios, not counts, so I use only the ratios. Each group watched the same film and lived through a different game.

Fifth, we assume our own bubble is the clear one. Lee Ross and Andrew Ward called it naive realism: the belief that you see things as they really are, so anyone who sees them differently must be uninformed, irrational or biased. Donald Redelmeier and Ross describe it as an "illusion of personal objectivity" (Redelmeier and Ross, APS Observer). This is what turns different universes into conflict. Not that we see differently, but that each of us thinks we are the one who doesn't.

What psychedelics suggest, and what they do not

When I first sketched this essay, I wrote that studies on psychedelics probably show this. I went and looked, and the honest answer is that they show something nearby.

The leading theory comes from Robin Carhart-Harris and Karl Friston, who call it REBUS, for "relaxed beliefs under psychedelics." Their model says the brain normally leans hard on its high-level guesses about the world, and that "psychedelics work to relax the precision of high-level priors or beliefs," which frees up the raw information coming in from the senses (Carhart-Harris and Friston, Pharmacological Reviews 2019). If perception is a controlled hallucination, this is the theory that psychedelics loosen the control. It is a model, not a finding, but it fits closely: the bubble is made of expectations, and here is a way to loosen them.

The measured part is about the self and its edges. Matthew Nour and colleagues surveyed 691 people about 1,828 drug experiences and built a scale for ego dissolution, "a compromised sense of 'self'." For psychedelics, ego dissolution rose with dose. For cocaine and alcohol it did not. And it went strongly with a feeling of unity with one's surroundings (Nour et al., Frontiers in Human Neuroscience 2016). A later team led by Rosalind Watts built a scale for connectedness, "a state of feeling connected to self, others and the wider world," and found scores rose after a psychedelic experience and stayed higher at six

months in observational samples, with a small trial in depression pointing the same way (Watts, Kettner et al., Psychopharmacology 2022). Both rest on self-selected people reporting on themselves, and the authors say so.

So here is what I can claim. The research shows that changing the brain's expectations can change the edges of the self and how connected a person feels to others and the world. It does not show that each person lives in a separate universe. That part is my reading. What the studies add is that the bubble's walls are not fixed. They can move.

I have had psychedelic experiences of my own. I am not going to describe them, and this is not a recommendation: they are illegal in most places and they carry real risks. What I will say is that they made the idea in this essay hard to argue with from the inside. The world I was living in changed while the world outside me did not. That is one person's report, not evidence, and I am only putting it here because it is where the idea started for me.

Overlap is closeness

If each person is a bubble, then two people are two bubbles, and the obvious question is how much they overlap.

Psychology has been drawing this picture for decades. In 1992 Arthur Aron, Elaine Aron and Danny Smollan published the Inclusion of Other in the Self scale. It is one question and seven pictures: pairs of circles labelled self and other, from barely touching to almost completely overlapping. You pick the one that "best describes your relationship" with a person (Aron, Aron and Smollan 1992, instrument description). It is a Venn diagram, and it has been used to measure closeness in a huge range of research since. The image in my head turned out to be a standard measure.

Overlap also shows up in the brain. Carolyn Parkinson, Adam Kleinbaum and Thalia Wheatley mapped the friendships in a class of about 280 first-year graduate students, then scanned 42 of them watching the same set of videos. Friends had the most similar brain responses, then friends of friends, then people three steps apart, in areas tied to emotion, attention and high-level reasoning. That held after controlling for age, gender, ethnicity, nationality and handedness. Parkinson's summary: "friends process the world around them in exceptionally similar ways" (Parkinson, Kleinbaum and Wheatley, Nature Communications 2018, via Dartmouth). It is one cohort, and the study cannot tell whether similar people become friends or friends become similar. Either way, the overlap is visible on a scan.

And overlap is what makes communication work. Greg Stephens, Lauren Silbert and Uri Hasson recorded one person telling an unrehearsed fifteen-minute story from her life, then played it to 11 listeners in a scanner. The listeners' brain activity tracked the speaker's, mostly one to three seconds behind, and in some areas a little ahead, as if they were anticipating her. When listeners heard a story in Russian, which they did not understand, the coupling disappeared. And the more a listener's brain ran ahead of the

speaker's, the better that listener understood the story (Stephens, Silbert and Hasson, PNAS 2010). Eleven people is very few. But the picture is striking: understanding someone looks like two bubbles briefly moving together, and with no shared language nothing moves.

Overlap can be built by doing things together. Suzanne Dikker and colleagues put portable EEG headsets on a whole high school class for a semester. Students' brainwaves were more in sync when they were more engaged, and the synchrony tracked how much they liked the teacher and how much they liked each other (Dikker et al., Current Biology 2017, via ScienceDaily). That is one class. Wider evidence comes from a meta-analysis by Ravi Mogan, Ronald Fischer and Joseph Bulbulia of 60 experiments on moving in time with other people: synchrony had a medium-sized effect on how kindly and helpfully people treated each other (Mogan, Fischer and Bulbulia, Journal of Experimental Social Psychology 2017). Marching, singing, rowing, playing in a band. Make the bubbles move together on purpose, and the people inside them tend to treat each other better.

New experiences do it too. In a study by Arthur Aron and colleagues, couples were strapped together with Velcro and crawled through an obstacle course while holding a pillow. They later reported happier relationships than couples given a dull task (described here). Kassandra Cortes, Emily Britton and colleagues ran the same kind of course years later, with couples crawling across a maze of mats holding a pillow between them, and found new shared experiences raised people's sense of growth and security in the relationship, and security predicted satisfaction (Britton and Cortes, SPSP). I only read reports on these two, so I use only the design and the direction. The reading in bubble terms is simple: a new experience, shared, is new territory both universes now contain.

Why the overlap is four-dimensional

When I first had this idea, I called it a 4D Venn diagram. Here is what I mean by that.

A Venn diagram on paper has two dimensions. Real overlap between two people runs along many more: what you notice, what you value, what you find funny, what your body expects, which language your head talks in, whether there is a picture behind your eyes when you remember something. Two people can overlap almost completely in humor and barely at all in politics. The diagram has more axes than a page.

The fourth dimension, in the plain sense, is time. Overlap is not fixed. The Velcro couples built some in one silly exercise. Friends in Parkinson's study either started similar or grew similar, and either way, the overlap they had at the scan was the result of a history. People drift apart too, when their worlds stop sharing new territory. Closeness is not a number. It is a shape that moves.

That is also why people misjudge closeness at the start, I think. A first conversation samples a few axes. You find overlap in two and assume it runs through all of them, or hit a gap in one and write off the rest.

Difference is closeness too

If overlap were the whole story, the closest person to you would be a copy of you. Nobody actually wants that.

The research on similarity is strong, and I want to state it fairly before I push on it. Matthew Montoya, Robert Horton and Jeffrey Kirchner pooled 313 studies and 460 effect sizes. Actual similarity and perceived similarity were both strongly tied to attraction ($r = .47$ and $r = .39$). But the details matter. Actual similarity mattered most when people had little or no interaction, and was not significant in existing relationships. Perceived similarity predicted attraction in all three settings (Montoya, Horton and Kirchner, Journal of Social and Personal Relationships 2008). In plain terms: once you actually know someone, it is how much you feel you share that counts, not a checklist.

Wu Youyou, David Stillwell, Andrew Schwartz and Michal Kosinski estimated personality from what more than 45,000 people liked and wrote on Facebook, rather than asking them, and found friends and partners were similar, more so for romantic partners. Kosinski's summary: "the great majority of our interactions are with people who are a lot like us" (Stanford GSB; The Conversation). The same review in The Conversation notes that the 1950s idea that people seek partners who complement them has almost no support, that Donn Byrne's studies found more attitude similarity meant more attraction, and that about 80 percent of people still believe opposites attract.

So the evidence says opposites rarely attract. But the same review reports that Arthur Aron argued difference can attract when the relationship looks likely to develop, because the other person offers room to grow. That matches what I see in my own life. My wife is the only person who has fully believed in my version of what is possible. She also challenges me, and I said in an earlier essay that this matters as much. The belief is overlap. The challenge is difference. If we only overlapped, she would agree with me, which is pleasant and useless. If we only differed, there would be nothing for the challenge to hold on to.

That is the refinement I would make to my own idea. Closeness can come from overlap or from appreciating difference, but appreciation needs some overlap to stand on. You cannot appreciate a universe you cannot reach at all. The Russian story in the Stephens study did not create interest in the listeners. It created nothing. Difference becomes closeness when there is enough shared language to see the other world and enough respect to like what you see.

The magnets run the other way

When I first wrote this idea down, I said two totally opposing universes oppose each other like magnets, and two matching ones attract. Then I checked, and I had the physics backwards.

Real magnets do the opposite. "It is a universal characteristic of all magnets that like poles repel and unlike poles attract" (LibreTexts, Physical Science). Two north poles push apart. A north and a south snap together. If people worked like magnets, opposites would attract, which is the folk belief the research

above says is mostly wrong.

I am keeping the mistake in, because it is the most useful thing in this essay. People are not magnets. In people, similar worlds tend to pull together and very different worlds tend to push apart: that is what the similarity research and the friendship scans show. The magnet image is how most of us learned to think about attraction, and it points the wrong way. About 80 percent of people believe opposites attract. Physics would back them. Psychology does not.

So if there is a magnet worth keeping, it is a backwards one. Like attracts like, mostly. And the exception, where difference pulls people together, is not a property of the difference. It is something people do: the work of appreciating a world that is not yours, from a place where you share enough to see it. Magnets have no say in which way they turn. People do.

Energy connections

People talk about energy. They say they had an instant connection with someone, that a room had bad energy, that a person drains them or lights them up. I think they are describing something real. I do not think it is energy in the physics sense.

This part is my interpretation, not a finding. I looked for evidence of a literal field or energy passing between people and found none. What I did find are measurable things that would feel, from the inside, a lot like an energy connection. Friends' brains respond to the world in similar ways. A listener's brain locks onto a speaker's and even runs ahead of it. A class falls into sync when it is engaged and likes each other. Moving together makes people kinder. None of that needs a mystery. All of it is overlap, happening live.

So my guess is that what people call an energy connection is what strong overlap feels like when you are inside it. You say something and the other person is already there. You do not have to translate. And what people call bad energy may be the opposite: two bubbles grinding at the edges, each sure, as naive realism predicts, that the other one is the distorted one. I can't prove that. But it explains the experience without asking anyone to believe in something no one has measured.

Older versions of the same idea

None of this is new. Philosophers and biologists got there long before brain scanners.

The closest ancestor of this essay's title is Jakob von Uexküll, a biologist writing in 1934. To understand any animal, he wrote, "we must first blow, in fancy, a soap bubble around each creature to represent its own world." His famous example is the tick, whose whole world comes down to three signals: light, the smell of butyric acid from mammal skin, and warmth. He described "each individual as a subject, living in a world of its own, of which it is the center" (Uexküll, A Stroll Through the Worlds of Animals and Men, excerpt). I did not know about his soap bubble when I named this. I am glad someone blew it first.

Gottfried Leibniz, in 1714, imagined the world made of units he called monads, and wrote that "The Monads have no windows, through which anything could come in or go out." Each one is "a perpetual living mirror of the universe." Then he gave the image I like best: the same town seen from different sides "appears quite different," and "it is as if there were so many different universes, which, nevertheless are nothing but aspects" of one (Leibniz, Monadology, sections 7, 56 and 57). Many universes, one town. That is the premise of this essay in one sentence, three hundred years early. Where I part from him is the windows. I think the bubbles do have windows, and closeness is what comes through them.

William James, in 1890, explained why two people in the same place live different lives: "Millions of items of the outward order are present to my senses which never properly enter into my experience. Why? Because they have no interest for me. My experience is what I agree to attend to. Only those items which I notice shape my mind" (James, Principles of Psychology, ch. XI). Attention draws the walls of the bubble.

Thomas Nagel, in 1974, asked what it is like to be a bat, and argued that imagining it "tells me only what it would be like for me to behave as a bat behaves." He made the same point about people: "The subjective character of the experience of a person deaf and blind from birth is not accessible to me" (Nagel, What is it like to be a bat?). Nagel is the warning against getting cocky. You can grow the overlap with someone. You cannot move into their bubble.

And there is Indra's net, an image from the Avatamsaka Sutra developed by the Huayan school of Buddhism between the sixth and eighth centuries. A net stretches out forever with a jewel at every knot, and in each jewel's polished surface, as Francis Cook later described it, "there are reflected all the other jewels in the net, infinite in number" (Indra's net). Every jewel is its own world. Every world contains a reflection of all the others. That is what overlap looks like at the scale of everyone.

How to use this

The evidence does not tell you how to be close to people. It tells you a few things about how worlds differ and how they come together, and each step below is tied to that.

Assume the other bubble is real. When someone sees something you do not, start from the dress, not from their stupidity. Naive realism says your first instinct will be that they are biased and you are not. Treat that instinct as a symptom.

Ask about the inside, not just the opinion. Do they picture things? Do they talk to themselves? What do they notice first in a room? The answers tell you where your bubbles do not overlap before you trip over it.

Build overlap on purpose. Do new things together. Do things in time together: cook, play music, walk, work side by side. The synchrony and novelty studies are small to medium in strength, but they point the same way, and the cost of trying is an afternoon.

Find the part you share before you lean on the difference. Difference becomes closeness when there is something under it. If you want to appreciate how someone sees the world, first find enough common language to see it at all.

Let the walls move. Overlap changes over time. People you have drifted from can be reached again with new shared ground, and people you are close to can drift if nothing new gets added.

For a team, assume the bubbles are different before you assume anyone is wrong. A lot of workplace conflict is two people looking at the same numbers and seeing two different games. Agreeing on definitions first, which is how I start every consulting job, is a way of building overlap before the argument starts.

For a school, teach the dress, the game and the inner-voice studies early. Knowing that other people literally see differently is one of the most useful facts a kid can have.

The objections I take seriously

"This is relativism. If everyone has their own universe, nothing is true." No. There is one physical world, and the dress in that photo is one actual dress, with one actual color. The claim is about access, not about truth. Each person meets the world through a private model. Some models are more accurate than others, and the way to find out is to compare them carefully, which you can only do if you first admit they are different.

"The brain studies are small." Some are, and I have said so each time. The stronger evidence is the similarity meta-analysis of 313 studies, the synchrony meta-analysis of 60 experiments, and the dress study of 1,401 people. The small studies add a picture of how overlap might work. The big ones carry the weight.

"Similarity attraction is just people being comfortable with themselves. Isn't this an argument for staying in your bubble?" It is the opposite. The research says people drift toward people like them. Kosinski says most of our interactions are with people a lot like us. Left alone, bubbles cluster. The essay is an argument that the most valuable closeness, the kind my wife gives me, comes from appreciating difference, and that you have to work for it because the default pull runs the other way.

"Psychedelics prove nothing about everyday perception." Agreed. They support a model in which expectations shape experience and the edges of the self can move. The everyday claims rest on the dress, the aphantasia survey, the inner-speech sampling and the football game, none of which involved drugs.

"Energy connections is just pseudoscience with a nicer name." If I claimed a literal energy, yes. I do not. I offer an interpretation: that the feeling people call energy is the experience of overlap, and that the measurable things underneath it are neural similarity, coupling and synchrony. If someone finds better evidence for something else, I will change my mind.

"The metaphor is doing too much work." Maybe. A universe is a big word for a perspective. I use it because perspective is too small. A perspective sounds like an opinion you could change over lunch. The research says the differences go down to what people see, hear and picture. That is closer to a different world than a different take.

What to do this week

1. Pick one person you have clashed with. Write down what they might be seeing that you are not, as if it were the dress and not a mistake.
2. Ask two people you are close to whether they picture things when they remember them, and whether they hear their own voice in their head. Listen to the answers without correcting them.
3. Do one new thing with someone you care about, something neither of you has done.
4. Do one thing in time with other people: play, sing, cook, walk at the same pace.
5. When you feel an instant connection with someone, notice what you actually share. When you feel bad energy, notice where your worlds do not touch, before you decide they are the problem.

What a world of bubbles could look like

This last part is my view, not a research finding.

If more people took this seriously, I think disagreement would look different. Before treating an argument as a difference of facts, people would check whether it is a difference of universes: different things noticed, different light expected, different games watched. A lot of fights would turn out to be dress fights. The real ones would be easier to have once those were out of the way.

I think we would build overlap on purpose instead of hoping for it. Schools, teams and towns would make time for people to do new things together and to move in time together, because the evidence says that is where shared ground comes from. And I think we would value the people who see differently from us more, not less, because they are the only way to see past the edge of our own bubble.

Leibniz said the monads have no windows. I think we each have a few. The people we are closest to are the ones who keep coming to them.

Sources and a note on method

Every figure is linked where it appears, to the primary study or the most direct report available. Where a claim rests on one study I say so; where it rests on a meta-analysis I give the number of studies. Some findings come from a report rather than the paper, because the paper was not open to me (Hurlburt's inner-

speech sampling, Hastorf and Cantril's football study, Parkinson's friendship scans, Dikker's classroom, and the two pillow-course studies); those link to the report I checked, and for Hastorf and Cantril and the pillow studies I used only the design and direction, no counts.

A few things that are commonly said were left out on purpose because the evidence does not carry them: that psychedelics prove experience is a separate universe (the research shows loosened expectations and moved self-boundaries, not that); that people exchange a measurable energy (I found no evidence for a literal field between people); and that opposites attract (the best evidence says they rarely do). The magnet image I started with was wrong about physics, and the essay says so.

The research brief behind this essay, with a strength-of-evidence rating on every item and the list of claims cut, is available on request. The earlier essays in this series are The Ego Death of Society, The Utility of Not Caring, Failing Confidently and Impatiently Waiting.

I used AI to research and draft this, under my direction, with a standing instruction to tell me where I was wrong before telling me where I was right, and every claim was checked against its source before it went in.